

Sugiyama 10 527 692 = WT-1 peptides in water/oil emulsion

LOGINID:SSPTAHPY1654

\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 16:59:46 ON 12 MAR 2007

=> file registry

FILE 'REGISTRY' ENTERED AT 17:00:01 ON 12 MAR 2007

=> s CYTWNQMNL/sqsp

L1 1 CYTWNQMNL/SQSP

=> file CAPLUS

FILE 'CAPLUS' ENTERED AT 17:00:56 ON 12 MAR 2007

=> s L1 and PATENT/dt

12 L1

5633762 PATENT/DT

L2 9 L1 AND PATENT/DT

=> dup rem L2

PROCESSING COMPLETED FOR L2

L3 9 DUP REM L2 (0 DUPLICATES REMOVED)

=> d L3 1-9 bib abs

L3 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:429563 CAPLUS

DN 142:462274

TI WT1-origin HLA-DR-binding antigen peptide as helper T cell-inducing and cancer vaccine boosting agent

IN Sugiyama, Haruo

PA Japan

SO PCT Int. Appl., 72 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005045027	A1	20050519	WO 2004-JP16336	20041104
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				
	TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				

CA 2544214	A1	20050519	CA 2004-2544214	20041104
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EP 1696027	A1	20060830	EP 2004-799497	20041104
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS

CN 1902313	A	20070124	CN 2004-80039886	20041104
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PRAI JP 2003-375603 A 20031105

WO 2004-JP16336 W 20041104

AB This invention provides a WT1-origin HLA-DRB1\*0405-binding antigen peptide; a polynucleotide encoding this peptide; a helper T cell-inducing agent contg. the peptide or the polynucleotide. A peptide which is a partial peptide comprising from 10 to 25 consecutive amino acids in the human WT1 amino acid sequence represented by SEQ ID NO:1 and binding to HLA-DRB1\*0405 to induce helper T cells; a encoding polynucleotide; a

helper T cell-inducing agent contg. the peptide or the polynucleotide; are provided. The Wilms' tumor gene WT1 is overexpressed in most types of leukemias and various kinds of solid tumors, including lung and breast cancer, and participates in leukemogenesis and tumorigenesis. WT1 protein has been reported to be a promising tumor antigen in mouse and human. In the present study, a HLA-DRB1\*0405-binding 16-mer WT1 peptide (a.a. 332-347) was found. The 16-mer WT1 peptide elicited WT1-specific cytotoxic T lymphocytes (CTL) effectively. WT1332-347 peptide induced differentiation and activation of CD4-pos. T lymphocytes into Th-1 type. Besides HLA-DRB1\*0405, binding to HLA-DRB1\*1502 was also obsd., showing that WT1332-347 is a promiscuous helper peptide. The results showed that this 16-mer WT1 peptide was immunogenic for the induction of WT1-specific CTL. Therefore, cancer immunotherapy using this 16-mer WT1 peptide as vaccine boosting agent should provide efficacious treatment for HLA-DRB1\*0405-pos. patients with tumors.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:14590 CAPLUS  
DN 142:112410  
TI Method for selecting WT1 vaccine adaptive patient  
IN Sugiyama, Haruo  
PA Japan  
SO PCT Int. Appl., 65 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005001117	A1	20050106	WO 2004-JP9378	20040625
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
CA 2530184	A1	20050106	CA 2004-2530184	20040625
EP 1640458	A1	20060329	EP 2004-746847	20040625
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1842603	A	20061004	CN 2004-80024559	20040625
PRAI JP 2003-184436	A	20030627		
JP 2004-70497	A	20040312		
WO 2004-JP9378	W	20040625		

AB A method is provided for selecting a patient with a high WT1 vaccine responsiveness using the frequency of WT1-specific CTL precursor cells as an index. Also provided is a clin. test reagent used for the method. The method comprises a process (a) for isolating a biosample contg. CTL precursor cells from a subject patient; a process (b) for measuring the existence frequency or quantity of WT1-specific CTL precursor cells present in the biosample isolated in the process (a); and a process (c) for evaluating whether or not the measurement result in the process (b) is high as compared with those of healthy persons, and judging the responsiveness to WT1 vaccine.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:610132 CAPLUS  
DN 141:156095  
TI Tumor antigen-derived dimerized peptides for use as vaccine against cancer  
IN Takasu, Hideo; Samizo, Fumio  
PA Sugiyama, Haruo, Japan; Chugai Seiyaku Kabushiki Kaisha; Sumitomo

Pharmaceuticals Company, Limited  
 SO PCT Int. Appl., 61 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004063217	A1	20040729	WO 2004-JP254	20040115
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ				
	AU 2004204031	A1	20040729	AU 2004-204031	20040115
	CA 2513701	A1	20040729	CA 2004-2513701	20040115
	EP 1584627	A1	20051012	EP 2004-702444	20040115
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	BR 2004006800	A	20060117	BR 2004-6800	20040115
	CN 1756763	A	20060405	CN 2004-80005847	20040115
	US 2006217297	A1	20060928	US 2005-541821	20050711
PRAI	JP 2003-7122	A	20030115		
	WO 2004-JP254	W	20040115		

AB Provided are cancer vaccine comprising tumor antigen-derived peptides (7-30 amino acid residues) dimerized through disulfide bond. The monomeric peptide of the dimerized cancer vaccine peptides are derived from human tumor antigen such as tumor suppressor gene product WT1.

L3 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:267353 CAPLUS

DN 140:286149

TI Modified peptide derived from mouse WT1 tumor antigen for use as cancer vaccine

IN Sugiyama, Haruo; Gotoh, Masashi; Takasu, Hideo; Samizo, Fumio; Kusunose, Naoto; Nakatsuka, Masashi

PA Chugai Seiyaku Kabushiki Kaisha, Japan; Sumitomo Pharmaceuticals Company, Limited

SO PCT Int. Appl., 65 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004026897	A1	20040401	WO 2003-JP11974	20030919
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	AU 2003264514	A1	20040408	AU 2003-264514	20030919
	EP 1548028	A1	20050629	EP 2003-797688	20030919
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	US 2006205667	A1	20060914	US 2005-528360	20050318
PRAI	JP 2002-275264	A	20020920		
	WO 2003-JP11974	W	20030919		

AB Disclosed is a cancer antigen peptide derived from mouse WT1 tumor antigen having a cysteine residue substituted, contg. the following amino acid sequence X-Y-Thr-Trp-Asn-Gln-Met-Asn-Leu (SEQ ID NO:4) wherein X represents Ser, Ala, Abu, Arg, Lys, Orn, Cit, Leu, Phe or Asn; and Y represents Tyr or Met; antigen presenting cells displaying complexes of those peptides and HLA-A24 antigen; cytotoxic T lymphocytes (CTL) recognizing the complex; and use as cancer vaccine. In the present study,

substitution, were introduced into the first anchor motif at position 2 of the natural immunogenic HLA-A\*2402-restricted 9-mer WT1 peptide (CMTWNQMNL; a.a. 235-243) or its deriv. with M.fwdarw.Y substitution. Those peptides showed antigenicity comparable to that of the wild type.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:252362 CAPLUS  
DN 140:286143  
TI Cancer vaccine preparations comprising antigen HLA-A24-restricted WT-1 protein epitopes and adjuvant in water-in-oil emulsion  
IN Sugiyama, Haruo  
PA Japan  
SO PCT Int. Appl., 24 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004024175	A1	20040325	WO 2003-JP11675	20030912

TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

AU	2003262094	A1	20040430	AU 2003-262094	20030912
EP	1550453	A1	20050706	EP 2003-795414	20030912
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK					
US	2007036808	A1	20070215	US 2005-527692	20050311
PRAI	JP 2002-266876	A	20020912		
	WO 2003-JP11675	W	20030912		

AB It is intended to provide WT1-origin cancer antigen peptides which are useful in vivo, in particular, in the clin. field and an administration dosage form of these cancer antigen peptides as a vaccine for cancer. Namely, a water-in-oil type emulsion contg., as the active ingredient(s), one or both of a peptide having the amino acid sequence Cys Met Thr Trp Asn Gln Met Asn Leu (SEQ ID NO:2) and another peptide having the amino acid sequence Cys Tyr Thr Trp Asn Gln Met Asn Leu (SEQ ID NO:3), and a process for producing the same.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2003:282423 CAPLUS  
DN 138:297644  
TI Novel method of inducing antigen-specific T cells  
IN Sugiyama, Haruo; Azuma, Ichiro  
PA Japan  
SO PCT Int. Appl., 50 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003028758	A1	20030410	WO 2002-JP9997	20020927
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					

EP	1447092	A1	20040818	EP 2002-800255	20020927
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,					

IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK  
 US 2005002951 A1 20050106 US 2004-490865 20040617  
 PRAI JP 2001-301224 A 20010928  
 WO 2002-JP9997 W 20020927  
 AB It is intended to provide a novel method of inducing antigen-specific T cells. Namely, a method of inducing antigen-specific T cells in a patient with a need therefor by administering to the patient (a) a compn. contg. as the active ingredient an antigen protein or an antigen peptide and (b) a compn. contg. as the active ingredient a bovine tubercle bacillus BCG-strain cell wall skeleton (BCG-CWS). characterized in that the compn. (b) is first administered and then the compn. (a) is administered; and medicinal compns. relating thereto.  
 RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2003:282422 CAPLUS  
 DN 138:297643  
 TI Novel method of inducing antigen-specific T cells  
 IN Sugiyama, Haruo  
 PA Japan  
 SO PCT Int. Appl., 59 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003028757	A1	20030410	WO 2002-JP9993	20020927
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				

EP 1447091 A1 20040818 EP 2002-800016 20020927  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK  
 US 2004247609 A1 20041209 US 2004-490873 20040617  
 PRAI JP 2001-301206 A 20010928  
 WO 2002-JP9993 W 20020927  
 AB It is intended to provide a novel method of inducing antigen-specific T cells. Namely, a method of inducing antigen-specific T cells in a patient with a need therefor by administering to the patient (a) a compn. contg. as the active ingredient an antigen protein or an antigen peptide and (b) a compn. contg. as the active ingredient a non-specific immunopotentiator, characterized in that the compn. (b) is first administered and then the compn. (a) is administered; and medicinal compns. relating thereto.  
 RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2003:22706 CAPLUS  
 DN 138:88638  
 TI Cancer vaccine containing cancer antigen based on tumor suppressor gene WT1 product and cationic liposomes  
 IN Mayumi, Tadanori; Sugiyama, Haruo; Ohsugi, Yoshiyuki  
 PA Chugai Seiyaku Kabushiki Kaisha, Japan; Chugai Pharmaceutical Co., Ltd.  
 SO PCT Int. Appl., 31 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2003002142 A1 20030109 WO 2002-JP6597 20020628  
 WO 2003002142 A8 20031211  
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
 UG, US, UZ, VN, YU, ZA, ZM, ZW

CA 2451846 A1 20030109 CA 2002-2451846 20020628  
 EP 1410804 A1 20040421 EP 2002-738876 20020628  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 CN 1520311 A 20040811 CN 2002-812693 20020628  
 US 2006165708 A1 20060727 US 2003-482327 20031229  
 PRAI JP 2001-199449 A 20010629  
 WO 2002-JP6597 W 20020628

AB Provided is a cancer vaccine contg. a cancer antigen comprising as the active ingredient a tumor suppressor gene WT1 product or its peptide fragment and cationic liposomes.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2002:777984 CAPLUS  
 DN 137:293535  
 TI Modified peptide derived from mouse WT1 tumor antigen for use as cancer vaccine  
 IN Sugiyama, Haruo  
 PA Japan  
 SO PCT Int. Appl., 30 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002079253	A1	20021010	WO 2002-JP2794	20020322
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, UG, US, UZ, VN, YU, ZA, ZM, ZW				

CA 2440303	A1	20021010	CA 2002-2440303	20020322
EP 1371664	A1	20031217	EP 2002-708646	20020322
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
BR 2002008183	A	20040302	BR 2002-8183	20020322
CN 1531553	A	20040922	CN 2002-807025	20020322
JP 3728439	B2	20051221	JP 2002-577877	20020322
US 2004097703	A1	20040520	US 2003-471835	20030915
JP 2006034296	A	20060209	JP 2005-229180	20050808
JP 3819930	B2	20060913		
PRAI JP 2001-83250	A	20010322		
JP 2002-577877	A3	20020322		
WO 2002-JP2794	W	20020322		

AB Disclosed is a cancer antigen peptide contg. the following amino acid sequence Cys-Tyr-Thr-Trp-Asn-Gln-Met-Asn-Leu (SEQ ID NO:3); a vaccine for cancer contg. the same as the active ingredient; and a DNA vaccine contg. a DNA encoding this peptide as the active ingredient.

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

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FILE 'STNGUIDE' ENTERED AT 17:04:16 ON 12 MAR 2007

=> file biosis embase medline

FILE 'BIOSIS' ENTERED AT 17:05:08 ON 12 MAR 2007  
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\* \* \* \* \* STN. Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 16:59:46 ON 12 MAR 2007

=> file registry

FILE 'REGISTRY' ENTERED AT 17:00:01 ON 12 MAR 2007

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=> file CAPLUS

COST IN U.S. DOLLARS

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ENTRY	SESSION
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FILE 'CAPLUS' ENTERED AT 17:00:56 ON 12 MAR 2007

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      5633762 PATENT/DT
L2      9 L1 AND PATENT/DT

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=> dup rem L2
PROCESSING COMPLETED FOR L2
L3          9 DUP REM L2 (0 DUPLICATES REMOVED)
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=> d L3 1-9 bib abs

L3 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:429563 CAPLUS  
DN 142:462274  
TI WT1-origin HLA-DR-binding antigen peptide as helper T cell-inducing and  
cancer vaccine boosting agent  
IN Sugiyama, Haruo  
PA Japan  
SO PCT Int. Appl., 72 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005045027	A1	20050519	WO 2004-JP16336	20041104
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	CA 2544214	A1	20050519	CA 2004-2544214	20041104
	EP 1696027	A1	20060830	EP 2004-799497	20041104
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT			



IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS  
 CN 1902313 A 20070124 CN 2004-80039886 20041104  
 PRAI JP 2003-375603 A 20031105  
 WO 2004-JP16336 W 20041104  
 AB This invention provides a WT1-origin HLA-DRB1\*0405-binding antigen peptide; a polynucleotide encoding this peptide; a helper T cell-inducing agent contg. the peptide or the polynucleotide. A peptide which is a partial peptide comprising from 10 to 25 consecutive amino acids in the human WT1 amino acid sequence represented by SEQ ID NO:1 and binding to HLA-DRB1\*0405 to induce helper T cells; a encoding polynucleotide; a helper T cell-inducing agent contg. the peptide or the polynucleotide; are provided. The Wilms' tumor gene WT1 is overexpressed in most types of leukemias and various kinds of solid tumors, including lung and breast cancer, and participates in leukemogenesis and tumorigenesis. WT1 protein has been reported to be a promising tumor antigen in mouse and human. In the present study, a HLA-DRB1\*0405-binding 16-mer WT1 peptide (a.a. 332-347) was found. The 16-mer WT1 peptide elicited WT1-specific cytotoxic T lymphocytes (CTL) effectively. WT1332-347 peptide induced differentiation and activation of CD4-pos. T lymphocytes into Th-1 type. Besides HLA-DRB1\*0405, binding to HLA-DRB1\*1502 was also obsd., showing that WT1332-347 is a promiscuous helper peptide. The results showed that this 16-mer WT1 peptide was immunogenic for the induction of WT1-specific CTL. Therefore, cancer immunotherapy using this 16-mer WT1 peptide as vaccine boosting agent should provide efficacious treatment for HLA-DRB1\*0405-pos. patients with tumors.  
 RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2005:14590 CAPLUS  
 DN 142:112410  
 TI Method for selecting WT1 vaccine adaptive patient  
 IN Sugiyama, Haruo  
 PA Japan  
 SO PCT Int. Appl., 65 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005001117	A1	20050106	WO 2004-JP9378	20040625
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2530184	A1	20050106	CA 2004-2530184	20040625
EP 1640458	A1	20060329	EP 2004-746847	20040625
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1842603	A	20061004	CN 2004-80024559	20040625
PRAI JP 2003-184436	A	20030627		
JP 2004-70497	A	20040312		
WO 2004-JP9378	W	20040625		
AB				
A method is provided for selecting a patient with a high WT1 vaccine responsiveness using the frequency of WT1-specific CTL precursor cells as				

an index. Also provided is a clin. test reagent used for the method. The method comprises a process (a) for isolating a biosample contg. CTL precursor cells from a subject patient; a process (b) for measuring the existence frequency or quantity of WT1-specific CTL precursor cells present in the biosample isolated in the process (a); and a process (c) for evaluating whether or not the measurement result in the process (b) is high as compared with those of healthy persons, and judging the responsiveness to WT1 vaccine.

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:610132 CAPLUS  
DN 141:156095  
TI Tumor antigen-derived dimerized peptides for use as vaccine against cancer  
IN Takasu, Hideo; Samizo, Fumio  
PA Sugiyama, Haruo, Japan; Chugai Seiyaku Kabushiki Kaisha; Sumitomo Pharmaceuticals Company, Limited  
SO PCT Int. Appl., 61 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004063217	A1	20040729	WO 2004-JP254	20040115
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ				
	AU 2004204031	A1	20040729	AU 2004-204031	20040115
	CA 2513701	A1	20040729	CA 2004-2513701	20040115
	EP 1584627	A1	20051012	EP 2004-702444	20040115
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	BR 2004006800	A	20060117	BR 2004-6800	20040115
	CN 1756763	A	20060405	CN 2004-80005847	20040115
	US 2006217297	A1	20060928	US 2005-541821	20050711
PRAI	JP 2003-7122	A	20030115		
	WO 2004-JP254	W	20040115		

AB Provided are cancer vaccine comprising tumor antigen-derived peptides (7-30 amino acid residues) dimerized through disulfide bond. The monomeric peptide of the dimerized cancer vaccine peptides are derived from human tumor antigen such as tumor suppressor gene product WT1.

L3 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:267353 CAPLUS  
DN 140:286149  
TI Modified peptide derived from mouse WT1 tumor antigen for use as cancer vaccine  
IN Sugiyama, Haruo; Gotoh, Masashi; Takasu, Hideo; Samizo, Fumio; Kusunose, Naoto; Nakatsuka, Masashi  
PA Chugai Seiyaku Kabushiki Kaisha, Japan; Sumitomo Pharmaceuticals Company, Limited  
SO PCT Int. Appl., 65 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004026897	A1	20040401	WO 2003-JP11974	20030919
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003264514 A1 20040408 AU 2003-264514 20030919  
EP 1548028 A1 20050629 EP 2003-797688 20030919

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

US 2006205667 A1 20060914 US 2005-528360 20050318

PRAI JP 2002-275264 A 20020920  
WO 2003-JP11974 W 20030919

AB Disclosed is a cancer antigen peptide derived from mouse WT1 tumor antigen having a cysteine residue substituted, contg. the following amino acid sequence X-Y-Thr-Trp-Asn-Gln-Met-Asn-Leu (SEQ ID NO:4) wherein X represents Ser, Ala, Abu, Arg, Lys, Orn, Cit, Leu, Phe or Asn; and Y represents Tyr or Met; antigen presenting cells displaying complexes of those peptides and HLA-A24 antigen; cytotoxic T lymphocytes (CTL) recognizing the complex; and use as cancer vaccine. In the present study, substitution, were introduced into the first anchor motif at position 2 of the natural immunogenic HLA-A\*2402-restricted 9-mer WT1 peptide (CMTWNQMNL; a.a. 235-243) or its deriv. with M.fwdarw.Y substitution. Those peptides showed antigenicity comparable to that of the wild type.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:252362 CAPLUS  
DN 140:286143  
TI Cancer vaccine preparations comprising antigen HLA-A24-restricted WT-1 protein epitopes and adjuvant in water-in-oil emulsion  
IN Sugiyama, Haruo  
PA Japan  
SO PCT Int. Appl., 24 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004024175	A1	20040325	WO 2003-JP11675	20030912
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003262094	A1	20040430	AU 2003-262094	20030912
EP 1550453	A1	20050706	EP 2003-795414	20030912
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2007036808	A1	20070215	US 2005-527692	20050311
PRAI JP 2002-266876	A	20020912		
WO 2003-JP11675	W	20030912		

AB It is intended to provide WT1-origin cancer antigen peptides which are

useful in vivo, in particular, in the clin. field and an administration dosage form of these cancer antigen peptides as a vaccine for cancer. Namely, a water-in-oil type emulsion contg., as the active ingredient(s), one or both of a peptide having the amino acid sequence Cys Met Thr Trp Asn Gln Met Asn Leu (SEQ ID NO:2) and another peptide having the amino acid sequence Cys Tyr Thr Trp Asn Gln Met Asn Leu (SEQ ID NO:3), and a process for producing the same.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2003:282423 CAPLUS  
DN 138:297644  
TI Novel method of inducing antigen-specific T cells  
IN Sugiyama, Haruo; Azuma, Ichiro  
PA Japan  
SO PCT Int. Appl., 50 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003028758	A1	20030410	WO 2002-JP9997	20020927
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1447092	A1	20040818	EP 2002-800255	20020927
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	US 2005002951	A1	20050106	US 2004-490865	20040617
PRAI	JP 2001-301224	A	20010928		
	WO 2002-JP9997	W	20020927		
AB	It is intended to provide a novel method of inducing antigen-specific T cells. Namely, a method of inducing antigen-specific T cells in a patient with a need therefor by administering to the patient (a) a compn. contg. as the active ingredient an antigen protein or an antigen peptide and (b) a compn. contg. as the active ingredient a bovine tubercle bacillus BCG-strain cell wall skeleton (BCG-CWS). characterized in that the compn. (b) is first administered and then the compn. (a) is administered; and medicinal compns. relating thereto.				

RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2003:282422 CAPLUS  
DN 138:297643  
TI Novel method of inducing antigen-specific T cells  
IN Sugiyama, Haruo  
PA Japan  
SO PCT Int. Appl., 59 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2003028757 A1 20030410 WO 2002-JP9993 20020927  
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS,  
 LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL,  
 PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,  
 UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,  
 CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 EP 1447091 A1 20040818 EP 2002-800016 20020927  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK  
 US 2004247609 A1 20041209 US 2004-490873 20040617  
 PRAI JP 2001-301206 A 20010928  
 WO 2002-JP9993 W 20020927  
 AB It is intended to provide a novel method of inducing antigen-specific T  
 cells. Namely, a method of inducing antigen-specific T cells in a patient  
 with a need therefor by administering to the patient (a) a compn. contg.  
 as the active ingredient an antigen protein or an antigen peptide and (b)  
 a compn. contg. as the active ingredient a non-specific immunopotentiator,  
 characterized in that the compn. (b) is first administered and then the  
 compn. (a) is administered; and medicinal compns. relating thereto.  
 RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2003:22706 CAPLUS  
 DN 138:88638  
 TI Cancer vaccine containing cancer antigen based on tumor suppressor gene  
 WT1 product and cationic liposomes  
 IN Mayumi, Tadanori; Sugiyama, Haruo; Ohsugi, Yoshiyuki  
 PA Chugai Seiyaku Kabushiki Kaisha, Japan; Chugai Pharmaceutical Co., Ltd.  
 SO PCT Int. Appl., 31 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003002142	A1	20030109	WO 2002-JP6597	20020628
	WO 2003002142	A8	20031211		
	W:		AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW		
	RW:		GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG		
	CA 2451846	A1	20030109	CA 2002-2451846	20020628
	EP 1410804	A1	20040421	EP 2002-738876	20020628
	R:		AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR		
	CN 1520311	A	20040811	CN 2002-812693	20020628
	US 2006165708	A1	20060727	US 2003-482327	20031229
PRAI	JP 2001-199449	A	20010629		
	WO 2002-JP6597	W	20020628		
AB	Provided is a cancer vaccine contg. a cancer antigen comprising as the				

active ingredient a tumor suppressor gene WT1 product or its peptide fragment and cationic liposomes.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2002:777984 CAPLUS  
DN 137:293535  
TI Modified peptide derived from mouse WT1 tumor antigen for use as cancer vaccine  
IN Sugiyama, Haruo  
PA Japan  
SO PCT Int. Appl., 30 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002079253	A1	20021010	WO 2002-JP2794	20020322
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2440303	A1	20021010	CA 2002-2440303	20020322
	EP 1371664	A1	20031217	EP 2002-708646	20020322
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	BR 2002008183	A	20040302	BR 2002-8183	20020322
	CN 1531553	A	20040922	CN 2002-807025	20020322
	JP 3728439	B2	20051221	JP 2002-577877	20020322
	US 2004097703	A1	20040520	US 2003-471835	20030915
	JP 2006034296	A	20060209	JP 2005-229180	20050808
	JP 3819930	B2	20060913		
PRAI	JP 2001-83250	A	20010322		
	JP 2002-577877	A3	20020322		
	WO 2002-JP2794	W	20020322		

AB Disclosed is a cancer antigen peptide contg. the following amino acid sequence Cys-Tyr-Thr-Trp-Asn-Gln-Met-Asn-Leu (SEQ ID NO:3); a vaccine for cancer contg. the same as the active ingredient; and a DNA vaccine contg. a DNA encoding this peptide as the active ingredient.

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> file stnguide

FILE 'STNGUIDE' ENTERED AT 17:04:16 ON 12 MAR 2007

=> file biosis embase medline

FILE 'BIOSIS' ENTERED AT 17:05:08 ON 12 MAR 2007

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FILE 'MEDLINE' ENTERED AT 17:05:08 ON 12 MAR 2007

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=> s L3
L4      0 L3

=> s L1
L5      0 L1

=> file stnguide
FILE 'STNGUIDE' ENTERED AT 17:06:11 ON 12 MAR 2007
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# Emulsion

From Wikipedia, the free encyclopedia

An **emulsion** is a mixture of two immiscible (unblendable) substances. One substance (the dispersed phase) is dispersed in the other (the continuous phase). Examples of emulsions include butter and margarine, espresso, mayonnaise, the photo-sensitive side of photographic film, and cutting fluid for metalworking. In butter and margarine, a continuous liquid phase surrounds droplets of water (water-in-oil emulsion). Emulsification is the process by which emulsions are prepared.

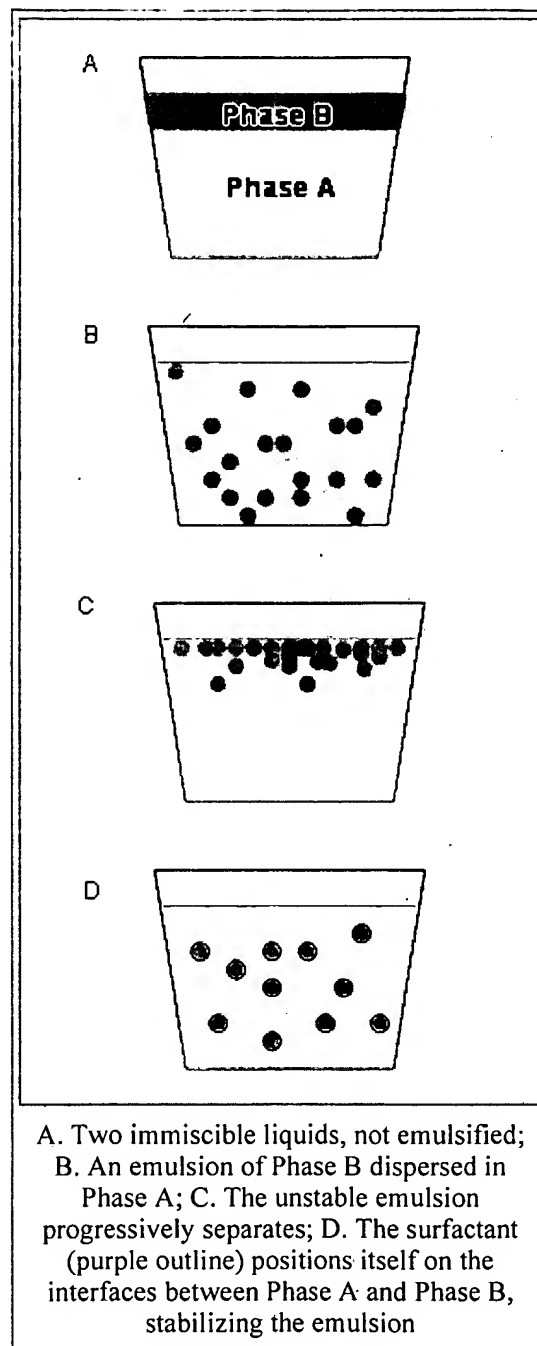
Emulsions tend to have a cloudy appearance, because the many phase interfaces (the boundary between the phases is called the interface) scatter light that passes through the emulsion. Emulsions are unstable and thus do not form spontaneously. Energy input through shaking, stirring, homogenizers, or spray processes are needed to form an emulsion. Over time, emulsions tend to revert to the stable state of oil separated from water. Surface active substances (surfactants) can increase the kinetic stability of emulsions greatly so that, once formed, the emulsion does not change significantly over years of storage. Homemade oil and vinegar salad dressing is an example of an unstable emulsion that will quickly separate unless shaken continuously. This phenomenon is called coalescence, and happens when small droplets recombine to form bigger ones. Fluid emulsions can also suffer from creaming, the migration of one of the substances to the top of the emulsion under the influence of buoyancy or centripetal force when a centrifuge is used.

Emulsions are part of a more general class of two-phase systems of matter called colloids. Although the terms colloid and emulsion are sometimes used interchangeably, emulsion tends to imply that both the dispersed and the continuous phase are liquid.

There are three types of emulsion instability: flocculation, where the particles form clumps; creaming, where the particles concentrate towards the surface of the mixture while staying separated; and breaking, where the particles coalesce and form a layer of liquid.

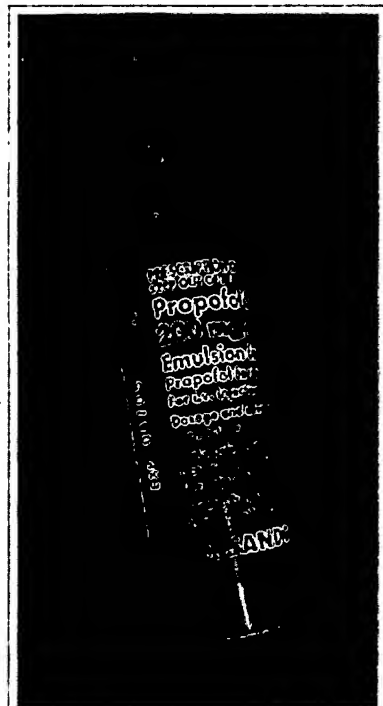
## Emulsifier

An **emulsifier** (also known as an **emulgent** or **surfactant**) is a substance which stabilizes an emulsion.





Examples of food emulsifiers are egg yolk (where the main emulsifying chemical is the phospholipid lecithin), and mustard, where a variety of chemicals in the mucilage surrounding the seed hull act as emulsifiers; proteins and low-molecular weight emulsifiers are common as well. In some cases, particles can stabilise emulsions as well through a mechanism called Pickering stabilization. Both mayonnaise and hollandaise sauce are oil-in-water emulsions stabilized with egg yolk lecithin. Detergents are another class of surfactant, and will chemically interact with both oil and water, thus stabilising the interface between oil or water droplets in suspension. This principle is exploited in soap to remove grease for the purpose of cleaning. A wide variety of emulsifiers are used in pharmacy to prepare emulsions such as creams and lotions.



20 ml ampule of 1% propofol emulsion suitable for intravenous injection. The manufacturers emulsify the lipid soluble propofol in a mixture of water, soy oil and egg lecithin.

Whether an emulsion turns into a water-in-oil emulsion or an oil-in-water emulsion depends on the volume fraction of both phases and on the type of emulsifier. Generally, the Bancroft rule applies: emulsifiers and emulsifying particles tend to promote dispersion of the phase in which they do not dissolve very well; for example, proteins dissolve better in water than in oil and so tend to form oil-in-water emulsions (that is they promote the dispersion of oil droplets throughout a continuous phase of water).

## External links

- Microfluidic Production of Monodispersed Submicron Emulsions Through Filtration and Sorting of Satellite Drops 2005-652 (<http://logikbase.com/website/techprofile.cfm?licid=1084>)
- Video images of the process of membrane emulsification ([http://www.micropore.co.uk/emulsion\\_video.html](http://www.micropore.co.uk/emulsion_video.html))
- Video image of monodisperse droplets produced by membrane emulsification (<http://www.nanomi.nl/Downloads/droplets.wmv>)

Retrieved from "<http://en.wikipedia.org/wiki/Emulsion>"

Categories: Colloidal chemistry | Food science | Soft matter | Matter

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